

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claims 1-38 (Cancelled).

Claim 39 (Currently Amended): A method for detecting change of a physically measurable property of a sample due to an environmental effect, comprising:

(i) subjecting the sample to the environmental effect for an action time, the environmental effect being made to act on the sample with a known position-dependent intensity distribution to cause a physical property change to the sample, which is based on a pattern function;

(ii) subsequently detecting transmission, reflection, or scattering of analysis radiation by the sample as a function of position coordinates of the sample and wavelength of the analysis radiation, so as to determine a response function that describes intensity of the transmitted, reflected, or scattered analysis radiation as a function of the position coordinates of the sample and the wavelength; and

(iii) determining correlation of the known position-dependent intensity distribution of the environmental effect, or of the pattern function on which this is based, with the response function by correlation analysis, the correlation being a measure of the change of the physically measurable property of the sample due to the environmental effect,

wherein the environmental effect is made to act on the sample through a mask, which has a specific position-dependent transmission function, so as to produce the position-dependent intensity distribution as an image of the mask on the sample.

Claim 40 (Cancelled).

Claim 41 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of radiation, and the intensity distribution is a position-dependent and wavelength-dependent intensity distribution.

Claim 42 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of light.

Claim 43 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of mechanical forces.

Claim 44 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect action of chemicals.

Claim 45 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of gases.

Claim 46 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of microorganisms.

Claim 47 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of radioactive radiation.

Claim 48 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of sound waves.

Claim 49 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect includes action of heat.

Claim 50 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect is caused by weathering of the sample.

Claim 51 (Previously Presented): The method as claimed in claim 39, wherein the environmental effect is caused by application of chemicals to the sample.

Claim 52 (Previously Presented): The method as claimed in claim 41, wherein the intensity distribution is produced as a reference pattern on the sample.

Claim 53 (Previously Presented): The method as claimed in claim 41, wherein the intensity distribution is produced by exposing the sample to light through the mask, which has a position-dependent and wavelength-dependent transmission function.

Claim 54 (Previously Presented): The method as claimed in claim 53, wherein exposure is carried out with artificial or natural sunlight.

Claim 55 (Previously Presented): The method as claimed in claim 53, wherein the mask is a barcode mask.

Claim 56 (Previously Presented): The method as claimed in claim 39, wherein the intensity distribution is a periodic intensity distribution with a spatial frequency.

Claim 57 (Previously Presented): The method as claimed in claim 50, wherein the correlation analysis is a Fourier analysis.

Claim 58 (Previously Presented): The method as claimed in claim 39, wherein the transmission, reflection, or scattering of analysis light in UV-VIS and/or NIR ranges is determined.

Claim 59 (Previously Presented): The method as claimed in claim 39, wherein the transmission, reflection, or scattering of analysis radiation by the sample is determined for a plurality of wavelength ranges, so as to determine a plurality of response functions for the plurality of wavelength ranges.

Claim 60 (Previously Presented): The method as claimed in claim 59, wherein a response function is respectively determined for red, green and blue light by RGB analysis.

Claim 61 (Previously Presented): The method as claimed in claim 39, wherein the reflection of the analysis light is detected.

Claim 62 (Previously Presented): The method as claimed in claim 61, wherein telecentric measurement optics are used for detection of the reflection.

Claim 63 (Previously Presented): The method as claimed in claim 39, wherein the scattering of the analysis light is detected.

Claim 64 (Previously Presented): The method as claimed in claim 63, wherein a confocal color measurement system is used for detection of the scattering.

Claim 65 (Previously Presented): The method as claimed in claim 39, wherein the reflection or scattering of the analysis light by the sample as a function of the position coordinates is detected using a color scanner.

Claim 66 (Previously Presented): The method as claimed in claim 39, wherein the reflection or scattering of the analysis light by the sample as a function of the position coordinates is detected using a digital camera.

Claim 67 (Previously Presented): The method as claimed in claim 39, wherein the response function is determined using a digital image processing electronics.

Claim 68 (Previously Presented): The method as claimed in claim 61 for determining the change of luster of a substrate surface.

Claim 69 (Previously Presented): The method as claimed in claim 68, wherein the substrate surface is a paint surface.

Claim 70 (Previously Presented): The method as claimed in claim 69, wherein the paint is an automobile paint.

Claim 71 (Previously Presented): The method as claimed in claim 63 for determining light fastness of colorants, or of substrates colored using the colorants.

Claim 72 (Previously Presented): The method as claimed in claim 39 for studying photoinduced or photo-oxidative aging of substances.

Claim 73 (Previously Presented): The method as claimed in claim 72, wherein the substances are selected from plastics, optionally colored using colorants, paints, textiles, metals, paper, wooden articles, construction materials, and cosmetic formulations.

Claim 74 (Previously Presented): The method as claimed in claim 39 for studying weatherproofness of substances.

Claim 75 (Previously Presented): The method as claimed in claim 39 for studying chemical stability of substances.

Claim 76 (Previously Presented): The method as claimed in claim 39 for studying abrasion resistance of coatings on a substrate.

Claim 77 (New): The method as claimed in claim 39, wherein said pattern function of the environmental effect produces a horizontally variable intensity pattern of the environmental effect on an upper surface of the sample.